

REMARKS

Claims 1 – 10 are presently pending in this application. Claims 1-2, 4 and 6-10 are amended to clarify earlier stated terms and for easier readability. The amendments are supported by the Specification, particularly, page 2 (Disclosure of the Invention) and last paragraph on page 3.

It is noted that the added language is not introduced to overcome the applied references, but only to clarify the invention and to remove any ambiguity there may be in the terms used. All the amended language has been recited in one form or another in the Applicants' previous response, therefore, no new matter is added and no new search is needed. The currently claimed subject matter does not alter the scope of the claimed subject to any degree that would require a new search.

Therefore, entry of this Amendment is proper.

In view of the above amendments and following remarks, reconsideration of this application is respectfully requested.

35 U.S.C. §112, 1st Paragraph

The Office Action rejects claim 6 under 35 U.S.C. §112, 1st paragraph asserting lack of support in the Specification and Drawing for the proximity of a keyless entry component and how it affects the antenna; and that the term "the embedded antenna" does not have proper antecedent basis. Applicants respectfully traverse.

Regarding the lack of support, Applicants respectfully direct the Examiner's attention to page 5 of the Applicants' specification, beginning with the second paragraph, where it states:

"That is, if a user pushes down the switch 6A of the handle 10 when the user drives a vehicle, the controller 14 operates the communicating section 14a to emit communication radio wave from the antenna A to communicate with respect to the driver's portable terminal apparatus, and when the controller 14 confirms a match of the ID or the like of the portable terminal apparatus, the controller 14 unlocks the lock apparatus ..."

Here, one of ordinary skill in the art would clearly recognize that the driver's portable terminal apparatus (in the context of an automotive door handle with a wireless antenna

embedded therein) is equivalent to or functions as the keyless entry component recited in claim 6.

Moreover, the desirability of such subject matter has been and still is a hotly discussed topic in automotive circles. That is, a keyless car entry system that is proximity sensitive, rather than manually operated. Also, proximity detectors are well known in the electrical arts, either as passive devices or active devices, being popularly known in one form as RFID tags. These aspects combine to fully enable one of ordinary skill to understand the claimed invention, and therefore every detail need not be elaborated (See MPEP section 2106.V.A.2)

Further, as stated MPEP section 2163.02, the claims do not have to use the exact same terms used in the specification, therefore, the use of the terms “keyless entry component” is proper.

Since one of ordinary skill in the art would reasonably understand the claimed subject matter in view of the description provided in the specification, and further in view of the prevailing state of keyless entry paradigms, Applicants respectfully submit that all of the subject matter recited in claim 6 is supported by the specification and therefore request the withdrawal of this rejection.

Regarding lack of support in the Drawings, Applicants respectfully submit that claim 6 is not directed to a driver’s keyless entry component, per se. Rather, aspects of the claims describe activity that may be dependent on the keyless entry component. MPEP section 2106 V.A.2 states, the “claims [are] to be drafted that show the invention (i.e., what is new rather than old). *In re Dossel*, 115, F.3d 942, 846, 42 USPQ2d 1881, 1884 (Fed. Cir. 1997).”

As one claiming a computer would not need to submit drawings showing a power station providing electricity to the computer, Applicants do not believe that a drawing showing the driver’s keyless entry component is necessary to fully and completely understand the claimed invention. Thus, in accordance with MPEP section 2106.V.A.2, Applicants submit that there is no need or requirement for Applicants to show the keyless entry component in the Drawings.

Also, as stated above, the principles whereby the “proximity of a keyless entry component” can be used to trigger another device is well known in the electrical arts. Therefore,

for at least the above reasons, Applicants respectfully request the withdrawal of the rejection for lack of support in the Drawings.

Regarding the rejection on the asserted lack of antecedent basis, Applicants respectfully direct the Examiner's attention to the preamble of claim 6 and also the second claimed element, stating: "an antenna embedded within" Notwithstanding the reversal of the term "embedded" with the term "antenna" to form the phrases "antenna embedded" versus "embedded antenna", Applicants submit that there is no ambiguity between these two phrases, as it is very common to interchange these phrases in the antenna arts and there is no reasonable confusion in the interchange of these phrases. Further, the plain language of the entirety of the claim satisfies MPEP section 2173.02's requirement for clarity and precision. That is, a reasonable degree of precision, clarity and particularity is provided to one of ordinary skill to unambiguously understand that "the embedded antenna" refers to "an antenna embedded." Moreover, just on issue of readability, the phrase "the antenna embedded" is understood to be an awkward conjunction of terms. Therefore, Applicants submit that there is no lack of antecedent basis, according to the standards promulgated by the MPEP.

Thus, for at least the above reason, Applicants respectfully request the withdrawal of this lack of antecedent basis rejection.

35 U.S.C. §102

The Office Action rejects claims 1, 4, 6, and 10 under 35 U.S.C. 102(b) over Maruyama (U.S. Patent Application Publication No. 2003/0184489 A1). This rejection is respectfully traversed.

The test for anticipation under section 102 is whether each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.

Verdegaal Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP §2131. The

elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicants' independent claim 1 recites: an embedded door handle antenna, comprising: a door handle; an antenna embedded in the door handle, the embedded antenna having a core around which an insulation covered conductor is wound, wherein the core comprises a magnetic core and a *wiring layer* which are laminated to each other, and the magnetic core contains a flexible magnetic body made of soft material. (Emphasis added)

Applicants' independent claim 6 recites: an embedded door handle antenna, comprising: a door handle having a hollow portion therein; an antenna embedded within the hollow portion of the door handle, the embedded antenna comprising a flexible magnetic core containing a flexible magnetic body made of soft material which is laminated to a *wiring layer*, around which an insulation covered conductor is wound; and a connector attached to one end of the embedded antenna, the connector facilitating connection of the embedded antenna to a power circuit, wherein the embedded antenna is energized by an action of at least one of request switch and a proximity of a keyless entry component. (Emphasis added)

As stated in Applicants' specification at page 2, first paragraph, an objective of the claimed subject matter is to provide a mechanism for forming a wiring space in the apparatus that does not require "another" wiring space for supplying electricity to electronic components. By superimposing a wiring layer 4 with the magnetic core 1 (see Figs. 3B and 3C in Applicants' specification), a channel or mechanism for signal lines "within" the core can be facilitated, thus providing a "smaller" antenna device.

It is noted that the wiring layer is not the core winding, and given the various elements recited in the Applicants' claims, cannot be reasonably construed as a core winding. As such, no disclosure or suggestion is found in Maruyama that relates to this claimed subject matter.

Maruyama discloses a method for hot melt forming a flexible antenna having laminate ribbons separated by layers of air 24 or rubber 34. See Figs. 3 and 4 and paras. [0009-0012, and specifically 0033-0034]. The layers of air 24 or rubber 34 enable the core to flex. See Figs. 7a-b.

Maruyama is pre-disposed to a process of forming his flexible antenna using a hot melt process. That is, the application of resin to encase the various portions of his antenna is the primary object of his disclosure. See Figs. 5-6 and para. [0059]. Maruyama discloses a core wiring 4 which is wound around the outer periphery of the bobbin portion 5. See para. [0030].

Maruyama's core 3 is completely separated from the bobbin 5, being encapsulated about with the bobbin gap 5a. See Fig. 2. Accordingly, there can be no wiring layer in Maruyama as it would have to penetrate the bobbin gap 5a in order to connect to an external device/terminal. Any such penetration would affect the integrity of the "seal" of the bobbin gap 5a.

Consequently, there is no description or suggestion in Maruyama concerning a wiring layer as claimed by the Applicants. Thus, Maruyama does not disclose or suggest all the features recited in Applicants' independent claims 1 and 6.

Claims 4 and 10 depend from claims 1 and 6, respectively. Therefore, for at least the above reasons, Applicants respectfully request the withdrawal of this rejection.

35 U.S.C. §103

The Office Action rejects claims 2 and 7 under 35 U.S.C. 103(a) over Maruyama in view of Orthmann (U.S. Patent No. 5,396,698). This rejection is respectfully traversed.

Orthmann is directed to a flexible antenna having a magnetic core 16 encased with coil wiring 12a/12b that is formed by printed circuit methods. Orthmann utilizes gaps 22(a/b) and 24(a/b) where wiring traces 18(a/b) can overlap with wiring traces 18(a/b) from the "opposite" side of the film 10(a/b) to form a continuous loop. See Figs. 1-2, 4-5, 9-10. In essence, Orthmann demonstrates a novel method for actually "fabricating" coil winding wires around the exterior of the core by using the film 10(a/b) as an insulator between the wiring traces 18(a/b) and connecting the ends of the fabricated wires via the gaps 22(a/b) and 24(a/b). By folding the film 10(a/b) around the core 16, he can create a ferromagnetically loaded antenna.

However, all of the coil windings (i.e., insulated by the film) are shown as exterior to the core 16. See Figs. 3 and 6, for example. Fig. 11 only shows "segmented" core elements or

individual plates 86 of the ferromagnetic material, wherein the “winding” is still exterior to 1.
See also col. 6, lines 25-39.

Thus, there is no core that comprises or contains a wiring layer. In fact, there is no discussion or suggestion regarding such a wiring layer, as Orthmann is directed to the problem of trying to develop an automated fabrication scheme for the external coil windings, not to any wiring layer that would be part of the core.

Therefore, Orthmann does not supply the subject matter lacking in Maruyama, as discussed above. Accordingly, individually or in combination, Maruyama and Orthmann, do not disclose, teach, or suggest all the subject matter claimed in Applicants’ independent claims 1 and 6.

Claims 2 and 7 depend from claims 1 and 6. For at least the above reasons, Applicants respectfully request the withdrawal of this rejection.

The Office Action rejects claims 3 and 8 under 35 U.S.C. 103(a) over Maruyama in view of Mejia (U.S. Patent No. 6,400,338). This rejection is respectfully traversed.

Mejia is directed to single form factor transponder device with an integrated coil antenna. Specifically, a unitary core is described, having one portion 16 reserved for the coil and one portion 18 reserved for the accompanying transponder electronics, all of which is encapsulated in a cover 34. The coil portion 16 is covered with a coil 22 and coupled to the transponder electronics via end terminals 24. See Figs. 4 and 8-10. The end terminals 24 are attached to metallization layers 26 provided on the integrated support portion 18. See Figs. 8-10 and col. 6, lines 31-53.

A PCB implementation is used for replacing the metallization layers 26, however, it is restricted to the integrated support portion 18. See col. 6, line 64 – col. 7, line 14. The basic principle of Mejia is seen in col. 7, lines 15-26, where discrete devices or circuits/chips can be easily attached to the coil/antenna terminals 24 via the PCB or the metallization layers 26.

It is worthy to note that there are no circuits or devices on the opposite of the integrated

support portion 18. Therefore, there would be no motivation to extend the PCB into the coil portion 18. Further, such an extension would increase Mejia's transponder size, which would be contrary to Mejia's desire to create a simple form factor transponder. As such, Mejia is completely silent about a wiring layer with the core.

In view of the above, it is clear that Mejia does not supply the subject matter lacking in Maruyama, as discussed above. Thus, individually or in combination, Maruyama and Mejia, do not disclose or suggest all the features recited in Applicants' independent claims 1 and 6.

Claims 3 and 8 depend from claims 1 and 6. Accordingly, for at least the above reasons, Applicants respectfully request the withdrawal of this rejection.

The Office Action rejects claims 5 and 9 under 35 U.S.C. 103(a) over Maruyama in view of Mejia. This rejection is respectfully traversed.

As discussed above, the combination of Maruyama and Mejia, do not disclose or suggest all the features recited in independent claims 1 and 6. Claims 5 and 9 depend from independent claims 1 and 6. Accordingly, for at least the reasons stated above, the Applicants request the withdrawal of this rejection.

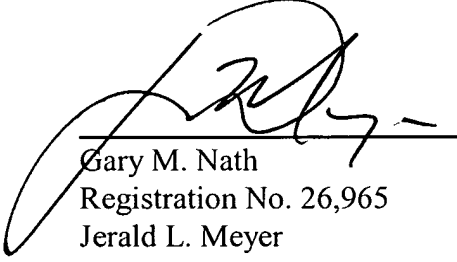
CONCLUSION

In light of the foregoing, Applicants submit that the application is in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicants respectfully request that the Examiner call the undersigned.

Respectfully submitted,
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